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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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3M INNOVATIVE PROPERTIES COMPANY				EDWARDS, LAURA ESTELLE
PO BOX 33427				PAPER NUMBER
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DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/808,584	JACOBSON ET AL.
	Examiner Laura Edwards	Art Unit 1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 21 March 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 36-56 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-24, 29-35, and 57 is/are rejected.
- 7) Claim(s) 11-18 and 25-28 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

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Reopening of Prosecution

PROSECUTION IS HEREBY REOPENED as authorization has been approved by the (TC) Director under 37 CFR 1.198 for purposes of entering the following new rejection(s). See MPEP § 1002.02 (c) and MPEP § 1214.07.

Claim Objections

Claims 11-18 and 25 are objected to because of the following informalities:

In claim 11, line 4, "an article" should be changed to --the article--.

In claim 16, line 4, "an article" should be changed to --the article--.

In claim 18, line 2, "an article" should be changed to --the article--.

In claim 25, line 2, "an article" should be changed to --the article--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 9, 10, 19-22, 34, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Prasad (US 5,628,826).

Prasad provides an apparatus for coating articles comprising an applicator (12), a conveyor (26) for sequentially transporting an article (i.e., needles) to the applicator, and at least one metering or doctor bar (31) positioned against the applicator (see col. 3, lines 57-60) to meter

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a predetermined amount of coating to the applicator for transfer to the article transported by the conveyor.

With respect to claim 3, see col. 4, lines 65+.

With respect to claim 9, the applicator comprises at least one roller (24).

With respect to claim 10, the applicator comprises an upper endless belt (12).

With respect to claim 19, Prasad teaches a coating station comprising a coating apparatus comprising an applicator (12), a conveyor (26) for sequentially transporting the articles to the applicator, a metering bar (31) pressed against the applicator to meter a predetermined amount of coating composition to the applicator for transfer to the article, and a second curing station (not shown; see col. 5, lines 8-9) for drying or solidifying the coating composition on the article.

With respect to claim 20, the applicator comprises at least one roller (24).

With respect to claim 21, the applicator comprises an endless belt (12).

With respect to claim 22, the conveyor (26) enables the needles to be conveyed to the curing tray.

With respect to claims 34 and 35, see col. 5, lines 8-9.

Claims 1-3, 9, 11-13, 16, 18, and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida et al (US 4,949,667).

Yoshida et al provide an apparatus for coating articles comprising an applicator (72), a conveyor (70) for sequentially transporting an article (P) to the applicator, and a metering or doctor bar (78) positioned against the applicator (see col. 7, lines 78 to col. 8, lines 1-3, 20-22,

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and lines 61-66) to meter a predetermined amount of coating to the applicator for transfer to an article transported to the applicator by the conveyor (see Fig. 9).

With respect to claim 2, see col. 9, lines 20-22.

With respect to claim 3, the apparatus to Yoshida et al can coat articles of different dimensions because the apparatus is used to coat different articles having a variety of dimensions as evidenced by col. 1, lines 14 and 15.

With respect to claims 9, the applicator comprises a roller (72).

With respect to claim 11, see Fig. 13 illustrating a second applicator (112) and a second metering or doctoring bar (114).

With respect to claims 12 and 13, see first applicator (72) and second applicator (112).

With respect to claim 57, see applicator roller (72), conveyor (70), and metering or doctor bar (78).

Claims 1, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by the Kirk Othmer Encyclopedia of Chemical Technology.

Kirk Othmer discloses an apparatus for coating articles (see COATING PROCESSES, bottom of page 395-belt coating) comprising an applicator belt, a conveyor for sequentially transporting an article (i.e., press board) to the applicator, and a metering or doctor knife/bar positioned against the applicator to remove excess coating material and thereby meter a predetermined amount of coating to the applicator for transfer to an article transported to the applicator by the conveyor (see Fig. 6).

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With respect to claim 9, the applicator comprises a single large roller that presses the applicator belt against the surface of the article.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (US 5,628,826).

Prasad provides a coating apparatus as set forth above. A metering bar (31) bearing against the applicator is provided to enable a desired thickness of coating to be applied to the needles. Prasad is silent concerning the amount of pressing force exerted by the metering bar on the applicator. However, it would have been obvious to one of ordinary skill in the art to determine, via routine experimentation, the appropriate metering or pressing force to apply to the applicator in accordance with the coating material used and the desired thickness of coating material to be deposited on the needles.

With respect to claim 8, Prasad is silent concerning the apparatus being configured to coat an edge face of tape. However, it would have been within the purview of one skilled in the art to configure the Prasad apparatus to coat any article (i.e., roll of tape) capable of being sandwiched between the upper and lower belts because Prasad recognizes that articles other than needles can be coated with the apparatus (see col. 4, lines 65+).

Claims 23, 24, and 29-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Prasad (US 5,628,826) in view of the Kirk Othmer Encyclopedia of Chemical Technology.

Prasad teaches a coating apparatus as set forth above and further illustrates a curing tray (16) to receive coated needles for curing but Prasad is silent concerning a second conveyor capable of transporting the article to the curing station or oven. However, it was known in the coating art, at the time the invention was made, to provide a supporting conveyor (i.e., cylinder, rolls, or belts-page 424, second paragraph) to hold and transport a coated substrate through a drying system (i.e., UV light, natural gas, etc.) as evidenced by Kirk Othmer (see DRYING SYSTEMS-pages 422-425). In light of the teachings of Kirk Othmer, it would have been within the purview of one skilled in the art to provide a secondary supporting conveyor in the Prasad apparatus to enable support of the coated needles to be cured.

With respect to claims 32 and 33, Prasad recognizes curing the coating composition on the needles but is silent concerning the use of a source of radiation. However, it was known in the coating art, at the time the invention was made, to provide a radiation source to cure a coating material as evidenced by Kirk Othmer (see DRYING SYSTEMS, pages 422-425 and RADIATION CURING, pages 832-834). It would have been obvious to one of ordinary skill in the art to utilize any known curing source including a radiation source as recognized by Kirk Othmer to cure the articles coated in the Prasad apparatus to result in a dry finished coated product.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (US 4,949,667) in view of the Kirk Othmer Encyclopedia of Chemical Technology.

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Yoshida teaches a coating apparatus as set forth above and recognize the use of a metering or doctor bar (78) or roll (240) pressed against the coating applicator roll to provide a desired film thickness. Yoshida et al are silent concerning the diameter of the bar being so small that it has a radius of at least 2.5 mm. However, it was known in the art, at the time the invention was made to provide a metering bar or roll of a small diameter such as 6-12mm so as to provide a radius of 3-6 mm or more to control final coating weight on a substrate or article as evidenced by Kirk Othmer (see COATING PROCESSES, page 387, "Mayer rod"). It would have been obvious to one of ordinary skill in the art to provide a metering bar or roll of a small diameter such as 6-12mm as taught by Kirk Othmer in the apparatus of Yoshida et al in order to facilitate control of final coating weight on the article.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (US 4,949,667).

Yoshida et al teach a coating apparatus as set forth above and recognize the doctor bar being pressed against the coating applicator roll (72) with a suitable force but Yoshida et al are silent concerning the force being in the range of at least 35 g/cm width against the applicator roll. However, it would have been obvious to one of ordinary skill in the art to determine, via routine experimentation, the appropriate pressing force used to apply to the applicator in accordance with the coating material used and the desired thickness of coating material to be deposited on the article.

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Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al (US 4,949,667) in view of Schafer (5,804,256).

Yoshida et al teach a coating apparatus as set forth above and recognize the apparatus being configured for coating at least one surface of different types of articles from a printed circuit board to a sensor (see col. 1, lines 8-15) using a roller type conveyor system (70). Yoshida et al fail to teach a conveyor system that would enable a user to deliver a hollowed article such as a roll of tape to at least one applicator roller. However, it was known in the art, at the time the invention was made, to provide a belt type conveyor system to sandwich an article therein for conveyance to at least one coating application roller to stably feed the article to the at least one applicator roller and thereafter to an exiting conveyor belt as evidenced by Schafer (see Fig. 1, belt conveyor system indicated by element 9). It would have been obvious to one of ordinary skill in the art to provide a belt type conveyor system as taught by Schafer in the Yoshida et al apparatus in place of the roller type conveyor system as an alternative conveyance means for feeding a hollowed flat article (i.e., edge face of tape roll) to the at least one applicator roller. The use of a belt type conveyor to sandwich a roll of tape therebetween for delivery to the roll coating applicator is within the level of ordinary skill in the art.

With respect to claim 17, Yoshida et al recognize an applicator/metering system that simultaneously coats both surfaces of different types of articles from a printed circuit board to a sensor (see col. 1, lines 8-15) using a roller type conveyor system (70). Yoshida et al fail to teach a conveyor system that would enable a user to deliver a hollowed article such as a roll of tape to the applicator/metering system. However, it was known in the art, at the time the invention was made, to provide a belt type conveyor system to sandwich an article therein for

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stably feeding the article between two applicators and thereafter to an exiting conveyor belt as evidenced by Schafer (see Fig. 1, belt conveyor system indicated by element 9). It would have been obvious to one of ordinary skill in the art to provide a belt type conveyor system as taught by Schafer in the Yoshida et al apparatus in place of the roller type conveyor system as an alternative conveyance means for feeding a hollowed flat article (i.e., edge face of tape roll) between the applicators. The use of a belt type conveyor to sandwich a roll of tape therebetween for delivery to the coating applicators is within the level of ordinary skill in the art.

Claims 6, 7, 8, 11-15, 19-22, and 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Kirk Othmer Encyclopedia of Chemical Technology.

Kirk Othmer teaches a belt coating apparatus (see COATING PROCESSES, bottom of page 395) as set forth above and recognizes the doctor bar being scrapingly disposed against the applicator belt so as to remove excess coating material but Kirk Othmer is silent concerning the force being in the range of at least 35 g/cm width against the applicator belt. However, it would have been obvious to one of ordinary skill in the art to determine, via routine experimentation, the appropriate pressing force of the doctor bar for application against the applicator belt in accordance with the coating material used and the desired thickness of coating material to be deposited on the article.

With respect to claim 8, the belt coating apparatus arrangement as shown by Kirk Othmer in Fig. 6, page 395, would enable the coating of an edge face of a roll of tape when the tape roll is placed on the flat conveyor surface so as to expose the edge face to the belt applicator. It is

within the purview of one skilled in the art to configure the apparatus to coat any article (i.e., roll of tape) capable of being sandwiched between the upper belt and lower supporting conveyor.

With respect to claims 11-15, Kirk Othmer illustrates a single coating apparatus including an applicator comprising a roller pressing a belt against the surface of an article with a single metering bar positioned against the belt but Kirk Othmer is silent concerning two coating apparatus including a second applicator with a second metering bar positioned against the second applicator. However, it would have been obvious to one of ordinary skill in the art, seeking to coat the article with layers of the same or different coatings, to duplicate the system so as to provide an additional applicator and metering bar downstream of the first coating apparatus. Duplication of parts is within the purview of the skilled artisan. *In re Harza*, 124 USPQ 372.

With respect to claim 19, Kirk Othmer discloses an apparatus for coating articles (see bottom of page 395-belt coating) comprising an applicator, a conveyor for sequentially transporting an article (i.e., press board) to the applicator, and a metering or doctor knife/bar positioned against the applicator to remove excess coating material and thereby meter a predetermined amount of coating to the applicator for transfer to an article transported to the applicator by the conveyor (see Fig. 6). Kirk Othmer recognizes the use of a belt applicator system but Fig. 6 does not illustrate or designate another station for drying or solidifying of the coating composition on the article. However, Kirk Othmer later recognizes the use of some type of drying or curing type system (p. 422-425) to ensure proper application of the coating to the substrate or article without a detrimental effect on the end product (see bottom of page 422). It would have been within the purview of one of ordinary skill in the art to provide a drying or

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curing system downstream from the belt coating apparatus in order to dry and/or cure the final coating on the article thereby effecting a finished end product.

With respect to claim 20, the applicator comprises a single large roller that presses the applicator belt against the surface of the article.

With respect to claim 22, Kirk Othmer shows in Fig. 6, a conveyor extending beyond the coating area such that it would have been obvious to one of ordinary skill in the art to use said conveyor as a means to deliver the coated article to the next processing area or station.

With respect to claims 32-34, Kirk Othmer recognizes the use of some type of drying or curing type system (see DRYING SYSTEMS, pages 422-425 and RADIATION CURING, pages 832-834) to ensure proper application of a coating to the substrate or article without a detrimental effect on the end product (see bottom of page 422). In the event of use of the apparatus with a radiation curable coating composition and in order to enable the composition to dry, it would have been obvious to one of ordinary skill in the art to utilize any known source of radiation following coating of the article in order to provide a dry finished coated product. Furthermore, it is within the purview of one skilled in the art to use any known and conventional source for drying or curing a given coating composition to effect a dry product.

Allowable Subject Matter

Claims 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Claim 25 would be allowable because there is no teaching or suggestion in the prior art of a system for manufacturing coated articles comprising the combination of a first application station comprising a first applicator, a conveyor for sequentially transporting articles to the first applicator, a metering bar positioned against the first applicator to meter coating composition to the first applicator to transfer to an article, a second applicator positioned to receive the article from the conveyor, a second metering bar positioned against the second applicator to meter a predetermined amount of coating composition to the second applicator to transfer to the article, and a second station for solidifying the coating composition on the article.

Claims 26-28 would be allowable because there is no teaching or suggestion in the prior art of a system for manufacturing coated articles comprising the combination of a first application station comprising a first applicator, a conveyor for sequentially transporting articles to the first applicator, a metering bar positioned against the first applicator to meter coating composition to the first applicator to transfer to an article, a second applicator opposite the first applicator, a second metering bar positioned against the second applicator to meter a predetermined amount of coating composition to the second applicator to transfer to an opposite side of the article, and a second station for solidifying the coating composition on the article.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent discloses the state of the art with respect to a substrate coating system comprising a first belt applicator including a metering bar for metering coating applied to

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the belt for transfer to the substrate followed by a second belt applicator including a metering bar for metering coating applied to the belt for transfer to the substrate: Below (US 3,377,202).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura Edwards
Primary Examiner
Art Unit 1734

Le
May 20, 2005



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